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EXAMINER	
BARBEE, MANUEL L	

ART UNIT	PAPER NUMBER
2857	

DATE MAILED: 06/07/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	10/673,753	WRIGHT ET AL.	
	Examiner	Art Unit	
	Manuel L. Barbee	2857	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE *3* MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *09 May 2006*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-32* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-17 and 19-32* is/are rejected.

7)☒ Claim(s) *18* is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____.
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: _____.

DETAILED ACTION

Claim Rejections - 35 USC § 103

1. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

2. Claims 1, 2 and 6-10 are rejected under 35 U.S.C. 103(a) as being unpatentable over Woolard et al. in view of Schienbein et al. (US Patent No. 6,738,692).

With regard to a plurality of sensors associated with one or more loads, as shown in claim 1, Woolard et al. teach receiving meter data from meters in a facilities (col. 3, line 61 - col. 4, line 6; col. 5, lines 1-29; col. 5, line 45 - col. 6, line 22). With regard to a load control component that has a waveform analyzer component that receives data from the sensors and determines power data that is utilized to determine the rate of energy distributed to the load, Woolard et al. teach an energy manager that tracks energy usage and finds trends and performs load shape analysis (functions of a waveform analyzer) and generates energy rate scenarios using the data (col. 5, line 45 - col. 6, line 22).

Woolard et al. do not teach that the load control component regulates the rate of energy utilized by the load, as shown in claim 1. Schienbein et al. teach a power controller to control power quality and power flow (col. 2, line 63 - col. 3, line 8). It would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the energy management system, as taught by Woolard et al., to include

a power controller, as taught by Schienbein et al., because then energy control would have been automatic (Woolard et al., col. 1, lines 5-8).

Woolard et al. do not teach that the control component and the waveform analyzer component are connected and communicate via a backplane, as shown in claim 2, or an input component that converts input signals to backplane signals, as shown in claim 6. Schienbein et al. teach an energy management system that uses a backplane to connect components (col. 4, lines 39-51). Schienbein et al. teach converting signals on the backplane (col. 8, line 7 - col. 9, line 67). It would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the energy management system, as taught by Woolard et al., to include a backplane and converting signals to backplane signals, as taught by Schienbein et al., because then management of dispersed power generation would have been facilitated (Schienbein et al. col. 1, line 42 - col. 2, line 10).

With regard to the load control component communicating with other load control components to determine a load control strategy, as shown in claim 7, Woolard et al. teach the energy management system includes a central server in communication with other servers (col. 7, line 26 - col. 8, line 25). With regard to determining the control strategy based upon data captured by the plurality of sensors, as shown in claim 8, Woolard et al. teach an energy manager that tracks energy usage and finds trends and performs load shape analysis (functions of a waveform analyzer) and generates energy rate scenarios using the data (col. 5, line 45 - col. 6, line 22). With regard to collecting data relating to the health of the load and using data to determine power data, as shown

in claims 9 and 10, Woolard et al. teach an energy manager that tracks energy usage and finds trends and performs load shape analysis (functions of a waveform analyzer) and generates energy rate scenarios using the data (col. 5, line 45 - col. 6, line 22).

3. Claims 3 and 4 are rejected under 35 U.S.C. 103(a) as being unpatentable over Woolard et al. in view of Schienbein et al. as applied to claim 2 above, and further in view of Holle et al. (US Patent Application Publication 2004/0150384).

Woolard et al. and Schienbein et al. teach all the limitations of claim 2 upon which claims 3 and 4 depend. Woolard et al. and Schienbein et al. do not teach a printed circuit board (PCB) with the waveform analyzer, a processor and memory, as shown in claims 3 and 4. Holle et al. teach a measurement module that measures power data and calculates energy consumption and includes a printed circuit board with a processor and memory (pars. 69, 70; Fig. 8). It would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the energy management combination, as taught by Woolard et al. and Schienbein et al., to include a PCB with a processor and a memory, as taught by Holle et al., because then the measurement module would have been easily connected or disconnected for enhancement in the measurement module (Holle, et al., pars. 16, 17).

4. Claim 5 is rejected under 35 U.S.C. 103(a) as being unpatentable over Woolard et al. in view of Schienbein et al. and Holle et al. as applied to claim 4 above, and further in view of Ehlers et al. (US Patent Application Publication 2001/0010032).

Woolard et al., Schienbein et al. and Holle et al. teach all the limitations of claim 4 upon which claim 5 depends. Woolard et al., Schienbein et al. and Holle et al. do not

teach that the processor time stamps the data as it is received and stores it in memory, as shown in claim 5. Ehlers et al. teach storing energy data with a timestamp (pars. 72, 74). It would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the energy management combination, as taught by Woolard et al., Schienbein et al. and Holle et al. to include a timestamp for data, as taught by Ehlers et al., because then energy management based on demand that depends on the time of day would have been facilitated (Ehlers et al., pars. 3-5).

5. Claims 11, 16 and 17 are rejected under 35 U.S.C. 103(a) as being unpatentable over Forth et al. (US Patent No. 2002/0120521) in view of Wilson et al. (US Patent Application Publication 2003/00187550).

With regard to a plurality of sensors associated with one or more machines, as shown in claim 11, Forth et al. teach meters that measure data related to energy consumption (par. 26). With regard to a programmable logic controller (PLC) that collects data from the sensors and determines the power to be distributed based at least in part upon metered data generated by a waveform analyzer component using data from the sensors, as shown in claim 11, Forth et al. teach a PLC that detects and quantifies power data and uses the data for control (pars. 23, 25, 26. 29).

Forth et al. do not teach regulating the power based upon metered data generated by a waveform analyzer, as shown in claim 11. Wilson et al. teach a controller that responds to data received from sensors in a meter (pars. 31, 32). It would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the energy management PLC, as taught by Forth et al., to include a

controller responsive to sensor data, as taught by Wilson et al., because then power usage would have been managed and controlled for efficiency (Forth et al., par. 6; Wilson et al., par. 3).

With regard to determining how power is distributed, as shown in claim 16, Forth et al. teach measuring power data (pars. 26, 29). With regard to a waveform analyzer inside the PLC processor module, as shown in claim 17, Forth et al. teach a PLC that detects and quantifies power data and uses the data for control (pars. 25, 26. 29). With regard to inputting parameters relating to the health of each machine, as shown in claim 17, Forth et al. teach a PLC that detects and quantifies power data and uses the data for control (pars. 23, 25, 26. 29).

6. Claims 12-14 and 19 are rejected under 35 U.S.C. 103(a) as being unpatentable over Forth et al. in view of Wilson et al., as applied to claims 11 and 17, and further in view of Schienbein et al.

Forth et al. and Wilson et al. teach all the limitations of claim 11 upon which claims 12-14 and 19 depend. Further with regard to PLC based card with a processor and a data storage device, as shown in claim 14, Forth et al. teach a processor and memory (par. 25). Forth et al. and Wilson et al. do not teach a PLC based card located on the PLC backplane, as shown in claims 12 and 13, or a PLC processor and waveform analyzer connected and communicating via a backplane, as shown in claim 19. Schienbein et al. teach an energy management system that uses a backplane to connect components (col. 4, lines 39-51). It would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the energy

management PLC combination, as taught by Forth et al. and Wilson et al., to include a backplane, as taught by Schienbein et al., because then management of dispersed power generation would have been facilitated (Schienbein et al. col. 1, line 42 - col. 2, line 10).

7. Claim 15 is rejected under 35 U.S.C. 103(a) as being unpatentable over Forth et al. in view of Wilson et al. and Schienbein et al., as applied to claim 14 above, and further in view of Ehlers et al.

Forth et al., Wilson et al. and Schienbein et al. teach all the limitations of claim 14 upon which claim 15 depends. Forth et al., Wilson et al. and Schienbein et al. do not teach time stamping data as it is received and storing the data in a sequence of events table, as shown in claim 15. Ehlers et al. teach storing energy data with a timestamp (pars. 72, 74). It would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the energy management combination, as taught by Forth et al., Wilson et al. and Schienbein et al., to include a timestamp for data, as taught by Ehlers et al., because then energy management based on demand that depends on the time of day would have been facilitated (Ehlers et al., pars. 3-5).

8. Claims 20, 22 and 24-26 are rejected under 35 U.S.C. 103(a) as being unpatentable over Ehlers et al. in view of Schienbein et al.

With regard to receiving data from one or more sensors associated with one or more loads, as shown in claim 20, Ehlers et al. teach a plurality of load sensing modules (par. 58). With regard to time-stamping and storing the data from the sensors, as shown in claim 20, Ehlers et al. teach storing the data with a time stamp (pars. 72, 74).

With regard to utilizing the time stamped data and energy algorithms to meter a load, as shown in claim 20, Ehlers et al. teach producing a meter table with the measured data (pars. 73, 74).

Ehlers et al. do not teach transferring the data to a backplane device, as shown in claim 20. Schienbein et al. teach an energy management system that uses a backplane to connect components (col. 4, lines 39-51). It would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the energy management system, as taught by Ehlers et al., to include a backplane, as taught by Schienbein et al., because then management of dispersed power generation would have been facilitated (Schienbein et al. col. 1, line 42 - col. 2, line 10).

With regard to determining total energy consumed by a load of a given period, as shown in claim 22, Ehlers et al. teach determining energy consumption (par. 74). With regard to measuring a power factor, as shown in claim 24, Ehlers et al. teach determining a power factor (par. 69). With regard to a computer readable medium with computer executable instructions, as shown in claim 26, Ehlers et al. teach a computer with software for energy management (par. 58).

Woolard et al. do not teach a backplane device that is a waveform analyzer device on a removable circuit board, as shown in claim 25. Schienbein et al. teach a backplane with connections for energy management and power conversion modules (col. 4, lines 39-51). It would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the energy management system, as taught by Woolard et al., to include a backplane with connections for energy management and

power conversion modules, as taught by Schienbein et al., because then management of dispersed power generation would have been facilitated (Schienbein et al. col. 1, line 42 - col. 2, line 10).

9. Claim 21 is rejected under 35 U.S.C. 103(a) as being unpatentable over Ehlers et al. in view of Schienbein et al. as applied to claim 20 above, and further in view of Hart (US Patent No. 5,995,911).

Ehlers et al. and Schienbein et al. teach all the limitations of claim 20 upon which claim 21 depends. Ehlers et al. and Schienbein et al. do not teach that sensed data is limited to volts, amperes and watts, as shown in claim 21. Hart teaches measuring only volts and amperes from which watts can be easily calculated (col. 5, lines 17-31). It would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the energy management combination, as taught by Ehlers et al. and Schienbein et al., to include measuring only volts and amperes, as taught by Hart, because then fewer sensors and measurement hardware would have been needed.

10. Claim 23 is rejected under 35 U.S.C. 103(a) as being unpatentable over Ehlers et al. in view of Schienbein et al. as applied to claim 20 above, and further in view of Hubbard et al. (US Patent No. 6,094,622).

Ehlers et al. and Schienbein et al. teach all the limitations of claim 20 upon which claim 23 depends. Ehlers et al. and Schienbein et al. do not teach measuring harmonic distortion, as shown in claim 23. Hubbard et al. teach measuring harmonic distortion (col. 4, line 58 - col. 5, line 3). It would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the energy management combination,

as taught by Ehlers et al. and Schienbein et al., to include measuring harmonic distortion, as taught by Hubbard et al., because then power consumption would have been better characterized and controlled.

11. Claims 27, 28 and 30-32 are rejected under 35 U.S.C. 103(a) as being unpatentable over Woolard et al. in view of Schienbein et al. and Holle et al.

With regard to retrieving load data from one or more sensing devices, as shown in claim 27, Woolard et al. teach receiving meter data from meters in a facilities (col. 3, line 61 - col. 4, line 6; col. 5, lines 1-29; col. 5, line 45 - col. 6, line 22). With regard to deriving energy data using a microprocessor and load data and determining a load control strategy, as shown in claim 27, Woolard et al. teach an energy manager that tracks energy usage and finds trends and performs load shape analysis (functions of a waveform analyzer) and generates energy rate scenarios using the data (col. 5, line 45 - col. 6, line 22).

Woolard et al. do not teach that the microprocessor is located on a PCB in a slot of a backplane or controlling loads, as shown in claim 27. Schienbein et al. teach an energy management system that uses a backplane to connect components and a power controller to control power quality and power flow (col. 2, line 63 - col. 3, line 8; col. 4, lines 39-51). It would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the energy management system, as taught by Woolard et al., to include a backplane and a power controller, as taught by Schienbein et al., because then management of dispersed power generation would have been facilitated (Schienbein et al. col. 1, line 42 - col. 2, line 10).

Holle et al. teach a measurement module that measures power data and calculates energy consumption and includes a printed circuit board with a processor and memory (pars. 69, 70; Fig. 8). It would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the energy management, as taught by Woolard et al., to include a PCB with a processor and a memory, as taught by Holle et al., because then the measurement module would have been easily connected or disconnected for enhancement in the measurement module (Holle et al., pars. 16, 17).

With regard to communicating energy data over a network and collaborating with multiple controllers to develop a distributed control strategy for a plurality of loads, as shown in claim 28, Woolard et al. teach communicating with servers and receiving data from multiple facilities and energy management in all the facilities (col. 7, line 26 - col. 8, line 25). With regard to measuring power factor, as shown in claim 30, Woolard et al. teach measuring power factor (col. 5, line 45 - col. 6, line 22). With regard to a computer readable medium with computer executable instructions, as shown in claim 32, Woolard et al. teach a computer with software for energy management (col. 5, lines 30-44).

Woolard et al. do not teach loads that are controlled by output devices connected to a backplane, as shown in claim 31. Schienbein et al. teach an energy management system that uses a backplane to connect components (col. 4, lines 39-51). It would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the energy management system, as taught by Woolard et al., to include a backplane, as taught by Schienbein et al., because then management of dispersed

power generation would have been facilitated (Schienbein et al. col. 1, line 42 - col. 2, line 10).

12. Claim 29 is rejected under 35 U.S.C. 103(a) as being unpatentable over Woolard et al. in view of Schienbein et al. and Holle et al. as applied to claim 27 above, and further in view of Hart.

Woolard et al., Schienbein et al. and Holle et al. teach all the limitations of claim 27 upon which claim 29 depends. Woolard et al., Schienbein et al. and Holle et al. do not teach that sensed data is limited to volts, amperes and watts, as shown in claim 29. Hart teaches measuring only volts and amperes from which watts can be easily calculated (col. 5, lines 17-31). It would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the energy management combination, as taught by Woolard et al., Schienbein et al. and Holle et al., to include measuring only volts and amperes, as taught by Hart, because then fewer sensors and measurement hardware would have been needed.

Allowable Subject Matter

13. Claim 18 is objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

Response to Arguments

14. Applicant's arguments filed 9 May 2006 have been fully considered but they are not persuasive.

With regard to claim 1, Applicant states that the cited passages of Woolard et al. merely disclose measuring of energy data from utility meters in the facility and do not teach or suggest a plurality of sensors associated with one or more loads. Woolard et al. teach meters that measure the energy usage, which would require sensors (Woolard et al., col. 5, line 45 - col. 6, line 22). With regard to claim 11, similarly, Forth et al. teaches meters that measure power (par. 6).

With regard to claim 27, Applicant states that the references do not disclose alone or in combination a microprocessor located on a printed circuit board inserted in a slot on a backplane. Applicant submits that the rejection is piecemeal and that one skilled in the art would not have arrived at such a combination unless guided by hindsight reading of the subject disclosure. However, as shown above, Holle teaches a PCB with plugs that connect to sockets (par. 70). Schienbein teaches a backplane used for connecting other circuits (col. 4, lines 39-51). It would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the energy management, as taught by Woolard et al., to include a PCB with a processor and a memory, as taught by Holle et al., because then the measurement module would have been easily connected or disconnected for enhancement in the measurement module (Holle et al., pars. 16, 17). Further, it would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the energy management system, as taught by Woolard et al., to include a backplane, as taught by Schienbein et al., because then management of dispersed power generation would have been facilitated (Schienbein et al. col. 1, line 42 - col. 2, line 10). One of ordinary skill would have been

motivated to use the backplane, as taught by Schienbein et al, to connect the PCB, as taught by Holle et al., to gain the benefits of modular components.

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Manuel L. Barbee whose telephone number is 571-272-2212. The examiner can normally be reached on Monday-Friday from 9-5:30.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Marc S. Hoff can be reached on 571-272-2216. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Manuel L. Barbee
Examiner
Art Unit 2857

mlb
June 2, 2006